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BC COASTAL FOREST INDUSTRY



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Creating forest sector solutions

BC Coastal Forest Sector Hem-Fir Initiative



BC Coastal Hem-fir Initiative 2012/13

Coast Operational Issues Forum
November 29, 2012

One vision
Global competitiveness

BC Coastal Forest Sector Hem-fir Initiative Overview

Objective:

- To enhance the competitiveness of the BC coastal industry by increasing the value of the coastal hemlock and amabilis fir (hem-fir) resource.

- **Partnership** between industry, government and research communities:
- **Multidiscipline** approach covering the full value chain, with market driven focus
- Applying best practices for managing the process of **Innovation**
- Developing and applying solutions in **short, medium and longer term** using common metrics



Bringing It All Together: Focus to March 2013

- Short-term value delivered:
 - \$41.5 million realized value
 - Implemented and measured benefit ratio ~3:1
 - Wider implementation will increase this ratio
- Poised for additional value:
 - Trials and implementation underway
 - Targeted implemented value to \$77 million

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Program Highlights/ Update

One vision
Global competitiveness

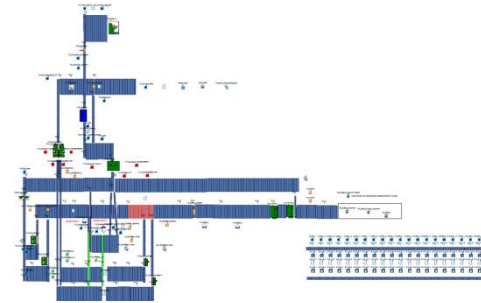
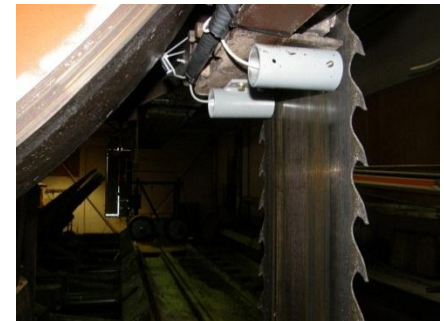
Hem-fir Sound Abatement New Product Development

- Winning competitive bids
 - 200 mbf installed – upgrading **\$0.40/bf** into a **\$2.75/bf** system
 - Installation at ~120ft/day and cost competitive with concrete incumbents
 - Currently four sections of fence installed and a lot of requests
 - Fits sustainability vision at municipal and provincial levels
- Accepted to BC Ministry of Transport Recognized Products List
- Supply chain has four participants from Port Alberni to Chilliwack



Sawmilling Best Practices

- Log Rotation
 - 3 mills, ~1-3% recovery increase, \$400k-\$2.5 million value
- Planning & Decision Support
 - 2 mills, targeting \$500k/mill improvement
- High Speed/Thin Saw Technology
 - 3 mills, ~\$100k/mill, ~50% increase in production at 1 mill
- Cedar Sawmilling
 - 10% value loss to staining/damage
- Competitive Drying
 - 3 mills, range of activity, \$1.8 million improvement to date



Intensive Quality Control (Falling and Bucking)

Need

- Demonstrate value of intensive quality control to maximize log value

Approach

- Compare value recovery before and after intensive coaching
 - Roadside buckers and fallers, Coaching every 4-5 days

Benefit

- Coaching improved value recovery by 3-7% (hemlock)
 - \$2.4 million annual benefit for coast
- One third of improvement disappeared after 6 weeks
 - 4-week frequency best for moderate quality stands
- Higher potential with variable or high-value stands
 - 10-25% value difference - \$1.5 million for coast
 - Daily interaction between QC and fallers/buckers was profitable



Red Cedar Banding Effectiveness

Need

- Reduce value loss from damage to western red cedar trees that occurs during falling

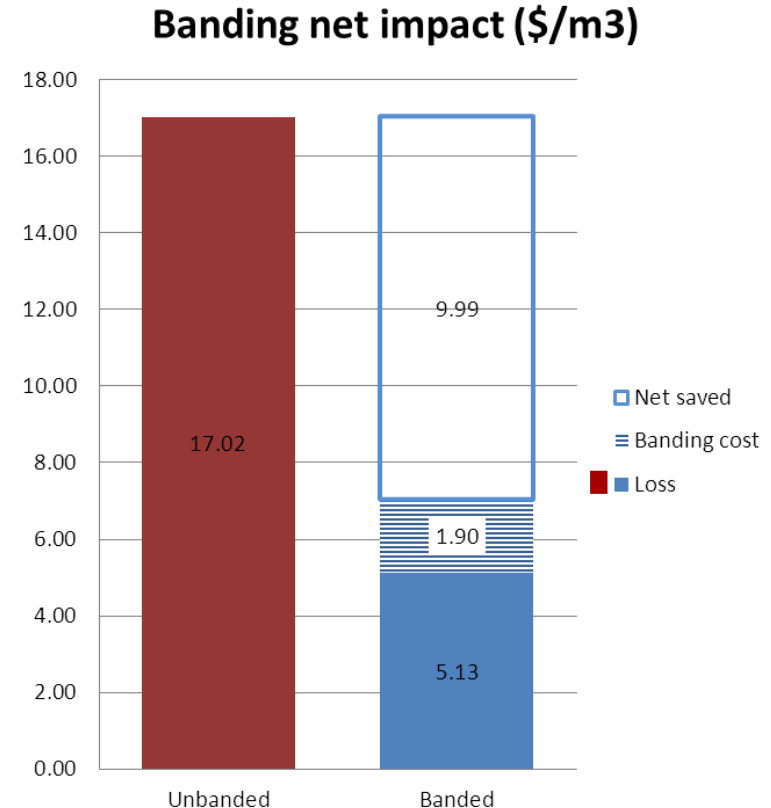
Approach

- Compare value losses during falling and yarding operations for banded and unbanded trees
- Determine loss sources (felling vs. yarding, downgraded vs. left-on-site)

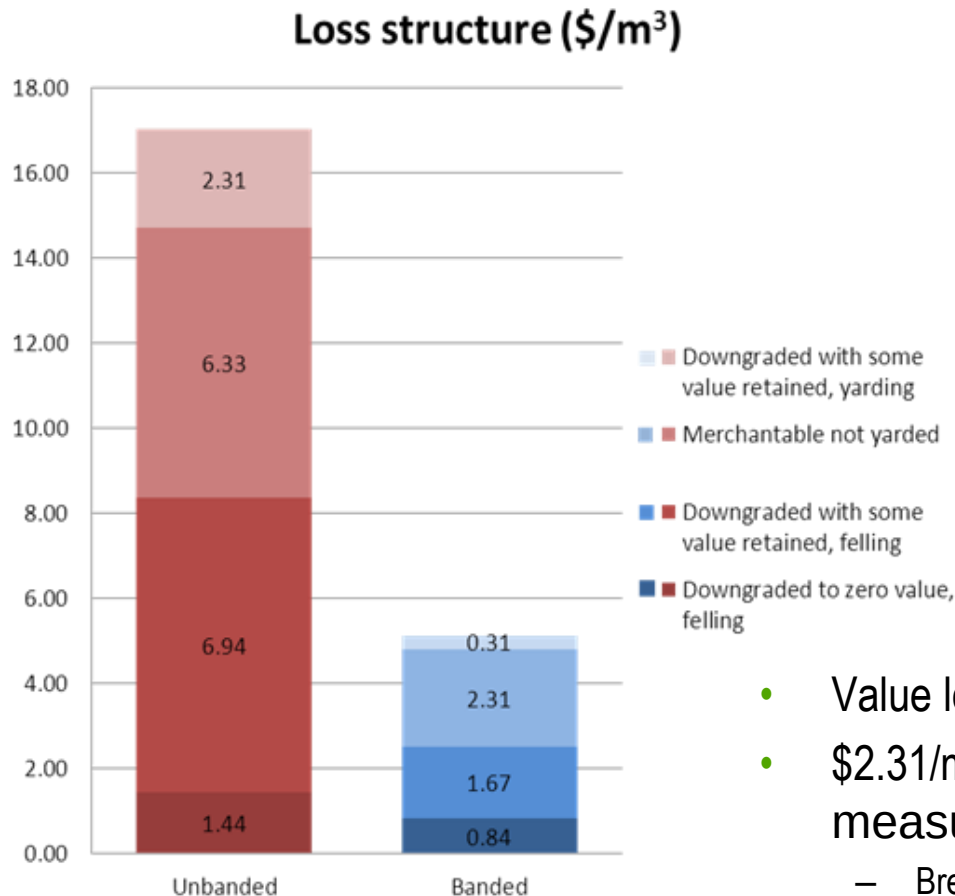
Benefit

Banding returned \$10/m³ net benefit on \$149/m³ average value

- \$1.9 million annual on coast
- From logs measured at roadside



Red Cedar Banding – Value Loss Sources



- Value losses about equal from falling and yarding
- \$2.31/m³ from merchantable volume that was measured after falling
 - Breakage, missed, ?
 - \$1 million coastal opportunity identified

NCCruise: New Compilation and Cruising Tool

Need

Develop tools and methods to improve ability to evaluate end-product value from standing timber.

Approach

- Different levels of engagement:
 - Industry operating on private land – operational implementation
 - Industry operating on public land – field trial to demonstrate value
 - Government – re-engaged to determine role of NCCruise
- Develop turnkey methods to integrate with existing systems
 - Link with industry-standard cruise-data system. Cooperator paid to modify field-equipment software



Benefit

- “...the method for calculating an end use product is [new]. NCCruise can ... greatly assist in directing our actual harvest cutting specifications, and ... ensure we are harvesting and optimizing our timber asset.” **Island Timberlands**

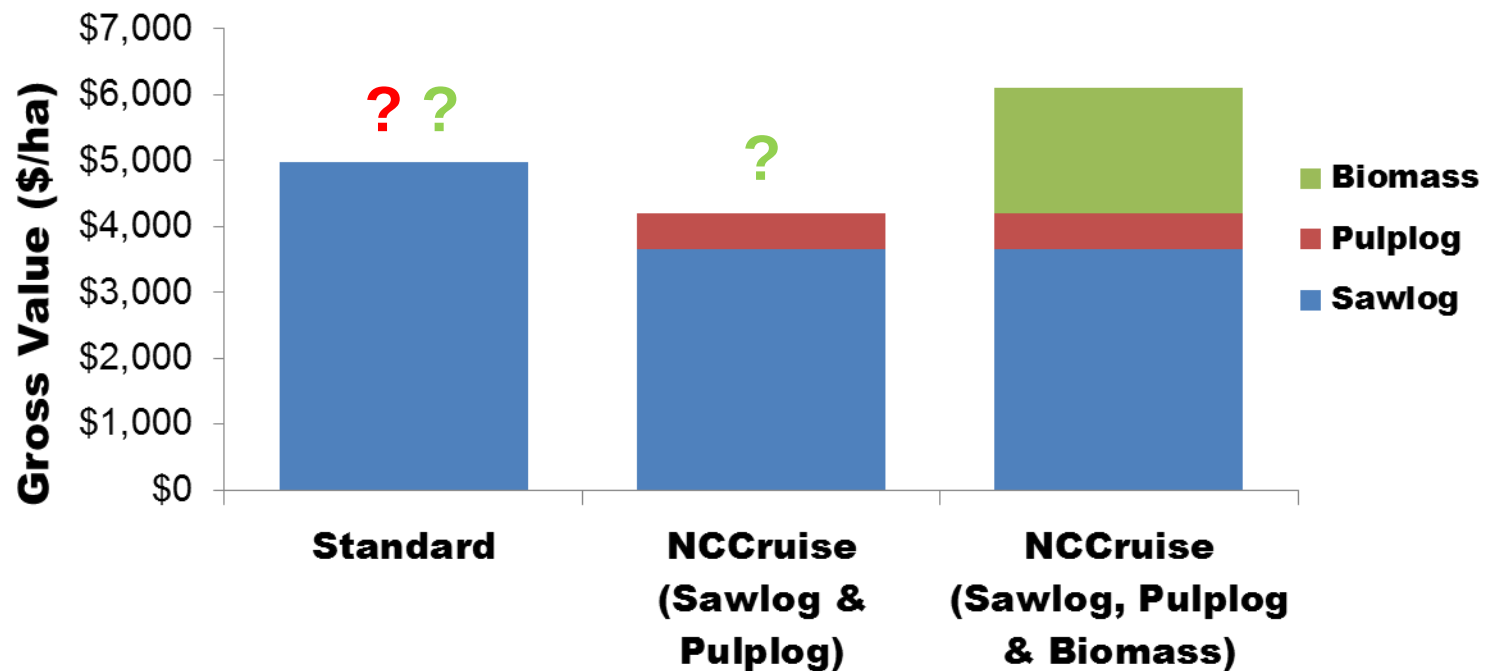
Next steps

- Integrate NCCruise with LiDAR data for landscape-level value assessment

Post-MPB Calculations Using NCCruise

Fibre Suitability from Long-dead Stands

- NCCruise accounts for losses caused by checks to better identify sawlog and pulplog volumes and values
- Biomass volumes and values identified



Scanner scaling

Need

- Develop alternative scaling methods to reduce costs while maintaining standards

Progress

- Scanner trial demonstrated accurate measurements for scaling
- BC FLNRO: Log Scanning Technical Review Committee
 - To oversee development of procedures and practices to use log scanning technology that will meet provincial scaling regulations
- CSA to develop national standards and Measurement Canada to develop field test procedures to certify log scanners (5 year timeline)

Benefit

- Single mill: \$1 million per year



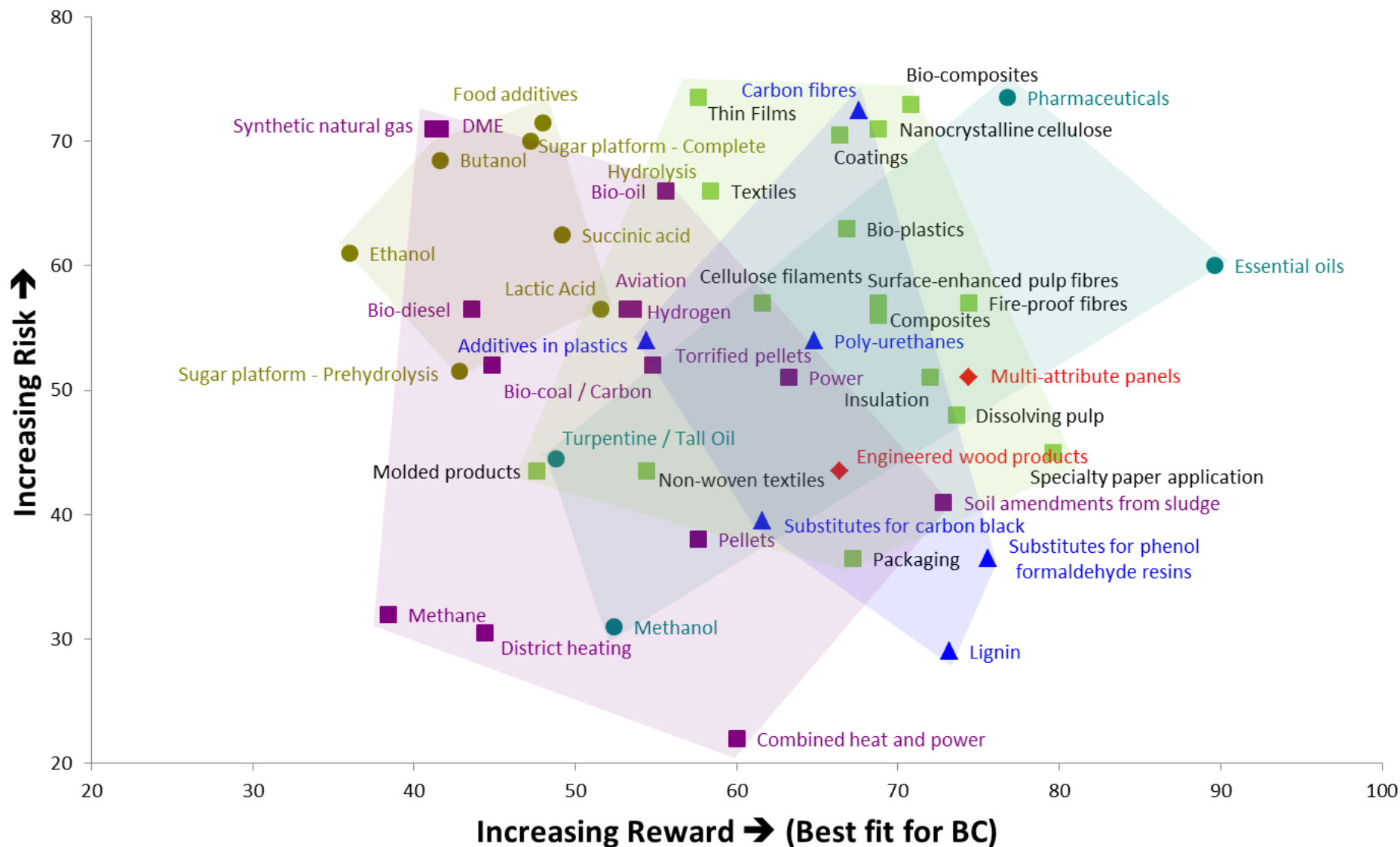
BC Coastal Bio-economy Opportunities

What are our advantages:

- Abundant fibre
- Unique biotica – species and extractives
- Low cost water transport
- Access to Asia and USA markets
- Independent operating units

BC Bio-product Best Bets - Grouped by Product Platform

- ◆ Wood-based products
- Pulp-based products
- ▲ Lignin-based products
- Extractives-based products
- Residue-based products
- Sugar-based products



Regional cluster Bio-pathways analysis

Next step:

- Techno-economic assessments of bio-pathways options for the Campbell River, Port Alberni, Nanaimo triangle



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5 Year Summary

BC Coastal Forest Sector Hem-fir Initiative Competitiveness Results - Short Term

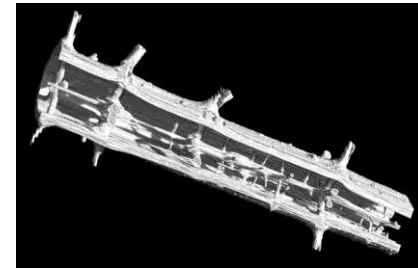
New Product Development

- Profile Decking
- Engineered Wood Products



Implementation of sawmilling best practices

- Drying optimization
- Technical mill evaluations & implementation



Log delivery efficiencies

- Alternate scaling
- Identifying transport efficiencies



Pulp & Paper to Bio-Refinery

- Hemlock density variability
- Improved paper product performance

Implemented Annual Benefit

\$34.7 million

BC Coastal Forest Sector Hem-fir Initiative Competitiveness Results – Medium Term

New Products Development

- Wood-concrete hybrid sound abatement

Implementation of sawmilling best practices

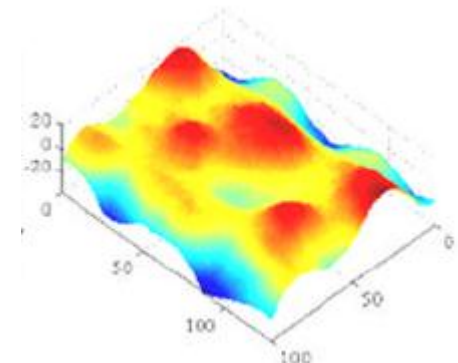
- Modeling mills for upgrades

Log delivery efficiencies

- Enhanced cruising
- Intensive Quality Control at bucking

Pulp & Paper to Bio-Refinery

- Press-room runability improvements



Implemented Annual Benefit

\$4.9 million

BC Coastal Forest Sector Hem-fir Initiative Competitiveness Opportunities – Long Term

New Products

- Radio-frequency pressed veneer products
- Cross Laminated Timber from hem-fir

Implementation of sawmilling best practices

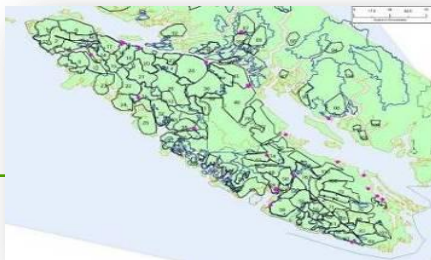
- Saw thickness and speed optimization

Log delivery efficiencies

- Laser scanning for scaling
- Central Merchandizing yards

Bio-economy Opportunities

- Biomass availability mapped
- Bio-product best bets for coastal conditions



Implemented Annual Benefit

\$2.1 million

